MISSISSIPPI STATE UNIVERSITY

INSTITUTE FOR ENVIRONMENTAL STUDIES

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August 16, 1973

NASA Scientific and Technical Information Facility
P. O. Box 33
College Park, Maryland 20740

Attention Earth Resources

Gentlemen:

This letter constitutes the fourth Type I Progress Report as required by Article II of the NASA contract document NAS5-21881.

(a) This report concerns ERTS-A proposal NASA control number SR-097 having the title: Application of ERTS-A Data to Agricultural Practices in the Mississippi Delta Region.

(b) The principal investigator is:

Dr. C. W. Bouchillon
Principal Investigator - UN 023
Mississippi State University
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Mississippi State, Mississippi 39762

(c) At this time there are no problems impeding the progress of the investigation.

(d) During this reporting period (ending July 31, 1973) a meeting was held at ERL-NASA/MTF to review the data products progress and to review the considerations of accuracy, classification parameters, etc. pertaining to the data products which will be forthcoming.

Data products which NASA/MTF has forwarded to Mississippi State University (M.S.U.) concerning a separate ERTS-A contract were discussed and desirable modifications which would be applicable to this ERTS-A contract were determined.

A meeting was scheduled in late May so that M.S.U. investigators could discuss with the county agents the establishment of fields and field checks to be made during the summer months coincident with the ERTS passes.

Field site visits and observations will be made coincident or adjacent to the ERTS passes until late September, 1973.

During this reporting period a comupter program has been written which can determine how much of any arbitrary test site is covered by any one ERTS-1 frame. The program accomplishes this by projecting the test site onto a plane and determining how much of this

projection is contained in the projection of the ERTS-1 frame (up to 30 June 1973) which contain any part of the 6 Mississippi Delta counties which comprise the area of study for this contract. A listing of all such frames is included in this report.

From this analysis we are able to make some statements about the suitability of any pass for analyzing the data over the entire 6 county area. For example, of the first 18 cycles only cycles IV, XIII, and XVI have cloud free coverage of all 6 counties, and the quality of camera 5 imagery during the pass of cycle XIII is poor. (See listing attached at end of report.)

In the near future we will check all the listed data to determine the amount of each county contained in each frame. From this we can discover if reducing the area of concern can increase the frequency of having useful ERTS-1 data.

The results of this particular study plus those obtained from other data analysis techniques will be included in the final report for this project.

(e) No significant results have been obtained during this period.

(f) No papers or publications have been released during this period.

(g) No recommendations are offered at this time.

(h) There are no changes in standing order forms.

(i) There are no descriptor forms for this period.

(j) All digital data for this project is obtained through ERL-NASA/ MTF. There are no request forms filed specifically for this project.

(k) There is no other information to report at this time.

Sincerely,

C. W. Bouchillon
Director

CWB/mjr

Attachment

LISTING OF ALL ERTS-1 DATA TAKEN OVER DELTA TEST SITE

CYCLE	DATE	FRAME ID	CLOUD COVER	QUALITY 4567	PRINCIPAL POINT W LONG	N LAT	SITE COVERAGE	DATA RCVD
Cycle I	8 Aug 72	1016-16061	100%	GGGG	89°46'	34°13'	30%	
		1016-16064	20%	GGGG	90°13'	32°47'	70%	
	9 Aug 72	1017-16120	40%	GGGG	91°18'	33°55'	71%	
		1017-16123	80%	GGGG	91°44'	32°39'	29%	
Cycle II	26 Aug 72	1034-16061	30%	GFFG	89°42'	34°30'	12%	
		1034-16064	50%	GFFG	90°08'	33°04'	88%	
		1034-16070	50%	GFF	90°34'	31°38'	1%	
	27 Aug 72	1035-16121	0%	GGGG	91°23'	33°42'	79%	✓
		1035-16124	10%	GGGG	91°50'	32°17'	15%	✓
Cycle III	13 Sept 72	1052-16061	10%	GGPG	89°40'	34°32'	11%	✓
		1052-16064	0%	GGPG	90°08'	33°05'	89%	✓
		1052-16070	0%	GGPG	90°34'	31°40'	1%	✓
Cycle IV	1 Oct 72	1070-16061	0%	GGGG	89°35'	34°39'	3%	✓
		1070-16064	0%	GGGG	90°02'	33°13'	86%	✓
		1070-16070	0%	GGGG	90°27'	31°48'	6%	✓
	2 Oct 72	1071-16120	0%	GGGG	91°00'	34°42'	15%	✓
		1071-16122	0%	GGGG	91°26'	33°17'	93%	✓
Cycle V	19 Oct 72	1088-16064	90%	GGGG	89°42'	34°32'	12%	
		1088-16070	100%	GGGG	90°09'	33°06'	90%	
		1088-16073	100%	GGGG	90°36'	31°40'	1%	
	20 Oct 72	1089-16122	10%	GGGG	91°09'	34°35'	22%	
		1089-16125	50%	GGGG	91°36'	33°10'	71%	

CYCLE	DATE	FRAME ID	CLOUD COVER	QUALITY 4567	PRINCIPAL POINT W LONG	N LAT	SITE COVERAGE	DATA RCVD
Cycle VI	6 Nov 72	1106-16065	60%	GGGG	89°48'	34°25'	21%	
		1106-16072	60%	GGGG	90°14'	33°01'	90%	
	7 Nov 72	1107-16124	60%	GGGG	91°11'	34°29'	30%	
		1107-16130	60%	GGGG	91°38'	33°03'	63%	
Cycle VII	24 Nov 72	1124-16070	70%	GGGG	89°43'	34°33'	13%	
		1124-16073	80%	GGGG	90°10'	33°06'	91%	
		1124-16075	100%	GGGG	90°35'	31°40'	1%	
	25 Nov 72	1125-16125	90%	GGGG	91°10'	34°30'	30%	
		1125-16131	90%	GGGG	91°37'	33°05'	68%	
Cycle VIII	13 Dec 72	1143-16125	100%	PGPG	91°12'	34°27'	34%	
		1143-16131	100%	PGPG	91°38'	33°01'	60%	
Cycle IX	30 Dec 72	1160-16065	100%	GGGG	89°40'	34°36'	9%	
		1160-16071	100%	GGGG	90°06'	33°10'	92%	
		1160-16074	100%	GGGG	90°32'	31°44'	4%	
	31 Dec 72	1161-16123	0%	GPGG	91°09'	34°33'	26%	✓
		1161-16130	0%	GPGG	91°35'	33°07'	71%	✓
Cycle X	17 Jan 73	1178-16064	80%	GGGG	89°38'	34°39'	6%	
		1178-16065	20%	GGGG	89°54'	33°47'	63%	✓
		1178-16070	70%	GGGG	90°04'	33°13'	90%	
		1178-16072	20%	GGGG	90°20'	32°21'	39%	✓
		1178-16073	60%	GGGG	90°30'	31°47'	6%	
	18 Jan 73	1179-16124	100%	GGGG	91°18'	33°56'	70%	
		1179-16130	100%	GGGG	91°43'	32°31'	32%	

CYCLE	DATE	FRAME ID	CLOUD COVER	QUALITY 4567	PRINCIPAL POINT W LONG	N LAT	SITE COVERAGE	DATA RCVD
Cycle XI	4 Feb 73	1196-16070	50%	GGGG	89°44'	34°36'	10%	
		1196-16073	40%	GGGG	90°11'	33°10'	97%	
		1196-16075	30%	GGGG	90°36'	31°44'	2%	✓
	5 Feb 73	1197-16125	10%	GGGG	91°10'	34°38'	22%	
		1197-16131	20%	GGGG	91°36'	33°12'	73%	
Cycle XII	22 Feb 73	1214-16071	30%	GGGG	89°49'	34°37'	11%	✓
		1214-16074	60%	GGGG	90°15'	33°12'	99%	
		1214-16080	40%	GGGG	90°41'	31°46'	4%	
	23 Feb 73	1215-16130	0%	GGGG	91°16'	34°37'	21%	✓
		1215-16132	0%	GGGG	91°43'	33°11'	52%	✓
Cycle XIII	12 Mar 73	1232-16072	0%	GPGG	89°52'	34°39'	8%	✓
		1232-16075	0%	GPGG	90°18'	33°14'	99%	✓
		1232-16080	0%	GPGG	90°44'	31°48'	4%	✓
	13 Mar 73	1233-16131	70%	GGGG	91°19'	34°35'	22%	
		1233-16133	80%	GGGG	91°45'	33°90'	45%	
Cycle XIV	30 Mar 73	1250-16072	70%	GGGG	89°55'	34°39'	8%	
		1250-16075	80%	GGGG	90°21'	33°14'	99%	
		1250-16081	90%	GGGG	90°46'	31°48'	4%	
	31 Mar 73	1251-16131	10%	GGGG	91°21'	34°40'	15%	✓
		1251-16133	0%	GGPG	91°47'	33°15'	42%	✓
Cycle XV	17 Apr 73	1268-16072	90%	GGGG	89°58'	34°39'	8%	
		1268-16075	100%	GGGG	90°24'	33°13'	100%	
		1268-16081	100%	GGGG	90°50'	31°47'	4%	
	18 Apr 73	1269-16131	70%	GGGG	91°22'	34°40'	14%	
		1269-16133	50%	GGGG	91°48'	33°14'	40%	

CYCLE	DATE	FRAME ID	CLOUD COVER	QUALITY 4567	PRINCIPAL POINT W LONG	N LAT	SITE COVERAGE	DATA RCVD
Cycle XVI	5 May 73	1286-16071	0%	GGGG	89°55'	34°44'	4%	✓
		1286-16074	0%	GGGG	90°21'	38°19'	98%	✓
		1286-16080	0%	GGGG	90°46'	31°53'	9%	✓
	6 May 73	1287-16130	100%	GGGG	91°19'	34°44'	12%	
		1287-16132	100%	GGGG	91°46'	33°18'	45%	
Cycle XVII	24 May 73	1305-16125	10%	GGGG	91°23'	34°41'	13%	✓
		1305-16131	10%	GGGG	91°49'	33°15'	37%	✓
Cycle XVIII	10 June 73	1322-16065	20%	GGGG	89°56'	34°43'	4%	✓
		1322-16072	20%	GGPG	90°22'	33°18'	98%	✓
		1322-16074	20%	GGPG	90°47'	31°52'	6%	✓
	11 June 73	1323-16123	60%	GGGG	91°21'	34°42'	14%	
		1323-16130	80%	GGGG	91°48'	33°17'	41%	